Architecture and the Human Condition: Humanitarian Design for Poverty and Disaster Relief

An Honors Thesis (HONR 499)

by

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ABSTRACT

As architects enter the profession, their primary objective should not be to create designs that will glorify their own name; architecture should be designed with the needs and desires of the intended occupants in mind. Architects have an opportunity to help those in need through their specific set of skills and training. In areas of poverty and disaster, an architect's designs can create a place of security and hope for the future for those people that are desperately in need of shelter. It is imperative that young architects become aware of these opportunities as they enter the profession so that they may be encouraged to give at least part of their time to humanitarian design efforts. Using my experiences in education and internship opportunities as a foundation, together with research on humanitarian design, for this honor s thesis, I designed an architecture studio class that will expose students to the opportunities they have as future architects to make a different in the communities close to them and around the world.

ACKNOWLEDGEMENTS

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I would also like to thank my parents, John and Debbie Roberts, and my soon-to-be husband, Jonathan Martin, for their moral support and encouragement throughout the process of completing this thesis.

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PREFACE

Standing in the middle of a community in Manchay, one of the poorest areas in Peru, I watched the design of a new community center unfold. I had the incredible opportunity to help with the design of a community center in this city. It was here that I saw how architects can use their skills to change the lives of those who have so little and in doing so, provide a sense of hope for the future. It was here, in the dust and dirt amidst all of the lack of housing and poverty, where I developed a real passion for architecture.

Looking at the community of Manchay, Peru from a nearby mountaintop

BACKGROUND

Introduction

Before exploring humanitarian architecture in poverty-stricken areas and areas of disaster relief, I will start by relaying my experiences through the past four years studying architecture. My definition of architecture has evolved since I began my education, and now I see the profession of architecture from a completely different perspective. Through this section, I will explore the heart behind the profession. From there, I will relay my personal experiences in an architectural studio. After pointing out what I think is missing from architecture studios today, I will share my internship experiences and how the internship changed my perspective on architecture. Finally, I will transition into a call for action towards the educational community to inform young architects about the topics of humanitarian design, as outlined in this paper.

Defining Architecture

There are a myriad of ways in which people define architecture. The dictionary defines architecture as "the profession of designing buildings, open areas, communities, and other artificial constructions and environments, usually with some regard to aesthetic effect" (Dictionary.com). Typically, when one thinks about architecture, a variety of buildings come to mind such as houses, museums, libraries, schools, apartments, churches, shopping malls – the list can go on and on. Many are familiar with famous architectural works such as Frank Lloyd Wright's Falling Water or Frank Gehry's Guggenheim Museum. Architecture can be considered as the nicest looking buildings or those that utilize the newest technologies and the most unique approaches.

Architects are often thought of as people designing the exceptional, innovative buildings and making lots of money. Often, the focus of architecture is based on the building itself rather than the building's occupants.

However, architecture is so much more than the structure of a building. Architecture encompasses the art of creating spaces for inhabitants. Architects have the responsibility of creating a safe and stable environment. They can take a client's dream or vision and turn it into a tangible reality. Architects have a unique set of skills that can help people around the world who need safe, affordable structures for a variety of purposes. The design of a building can promote human activity within the walls. Architecture is mainly about people, not the structure. Architecture should be created purely for the experience and security of human beings and not for the glory and prestige of the architect. This is the heart and soul of architecture.

Architecture Focused on the People

When an architect designs a building, the main focus should be on the clients. The main considerations should be the client's needs, desires, safety, and experiences. The occupants are the ones who will be using and experiencing the building for years to come. The design of a space has a direct correlation with how the space is used and enjoyed.

In the process of going through architecture school, it is easy for a student to design for himself or herself instead of for a client. More often than not, a student is given a set of parameters and a program required by an imaginary client, and it is up to the student to design a building that fits those needs. While the intention is to teach the

student to design to a specific set of parameters while being creative with their design concepts, it is very easy for a student to focus on the aesthetics of a building instead of how the space will be utilized. It is easy for a student to lose sight of the "client's" desires and requirements. It is imperative for architecture professors to emphasize the importance of keeping the client in mind 100% of the time. The main focus of an architecture studio project should be on the clients. Studios approach this focus in a variety of different ways.

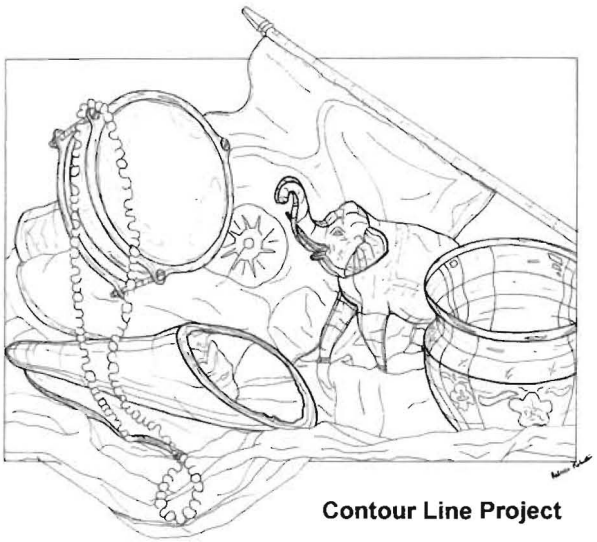
The Purpose of the Design Studio in Architectural Education

First of all, what is the purpose of an architectural studio during a student's undergraduate studies? The University of Oregon states that the architectural studio is a place "in which students learn through hands-on experience in design" (Architecture.uoregon.edu). Typically, a student enters these classes without any prior experience in the field of architecture, so professors start with the basics and build on concepts that refine and direct students' skills. Therefore, a studio of first-year student work typically looks very different than a studio of fourth-year student work.

During the first year of an undergraduate architectural studio, students typically begin to learn how to think as an architect. This entails pushing the students outside of their comfort zone and asking them to think outside of the box. Pushing the limits of students' minds helps them to consider what makes up a "good" design of a building, object, or a space. For instance, for the first day of my first-year

Well-Designed Item Model – Command Hook

undergraduate studio, we were asked to bring an item to class that we thought was well designed and to describe what makes the design of the object successful. After our discussions, we were asked to create a small model displaying the positive design aspects of our particular item. One of the items brought to the discussion was a Command Hook. This object has the ability to hold a large amount of weight while keeping a slim and discreet design. It attaches to the wall and can be removed without damaging or leaving a hole in the wall. Command Hooks also come in a variety of sizes, designs, and colors to accommodate a variety of projects.



Contour Line Project

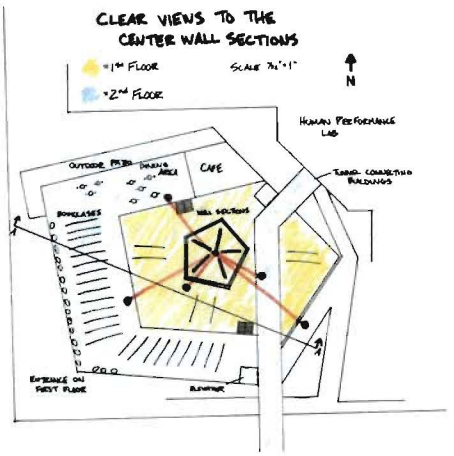
The first year of an architectural studio also focuses on students learning the skills and methods necessary to communicate ideas effectively. This could include skills in drawing, writing, technology, and more. In Ball State University's first-year studio, the students focus on enhancing their hand-drawing abilities. The students are not allowed to use the computer to type or print any of their studio projects because the professors feel that it is incredibly important for students to learn how to express their ideas on paper without always having to rely on the computer. We completed many basic artistically-oriented projects in order to enhance our drawing skills, such as

Tonal Value Project

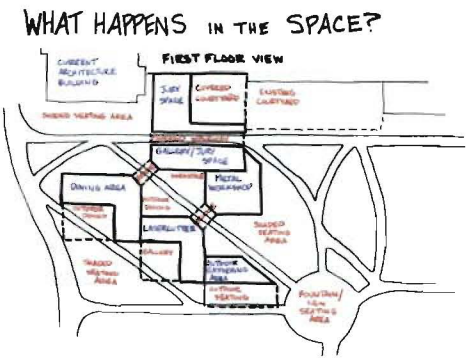
learning how to draw with contour lines, to sketch objects, and to hand draw a building's dimensions on a set of plans, sections, and elevations.

Digital Design Tower – Learning to use computer software to design

Students in the second year of their undergraduate education learn to expand upon their existing skills and learn new ways of expressing their ideas. Most students begin learning about the variety of software programs that are available to help with design projects. Some of this software is widely used by architectural firms, such as AutoCAD, Revit, and Sketchup. In one of my second-year studios, the use of design charettes was often used. A charette is a short exercise in which architects begin to solve a design problem by sketching out all of their design ideas and possible solutions. The charettes used in studios often direct students to learn how to express their ideas simply and succinctly with clear, readable graphics.



Studio Charette – Architecture Library



Studio Charette – Architecture Studio Space

In addition to expanding the skills necessary to express ideas, students also learn how to apply more design solutions to actual design challenges. At this point,

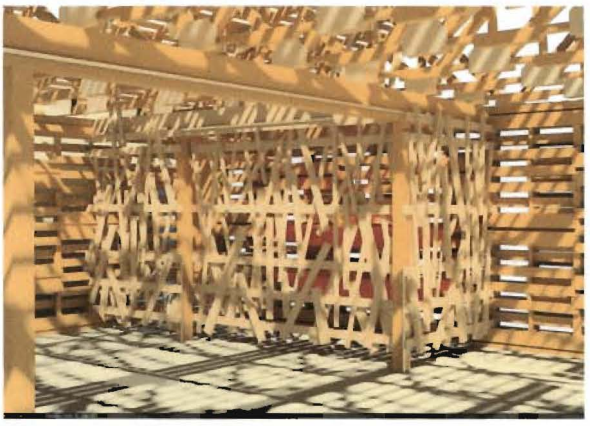
students are given a problem statement with a project to complete and a list of requirements to meet. These requirements could be at the request of an imaginary client or merely from the professor. Either way, the student's challenge is to meet the requirements of the project while using a creative design concept and the necessary communication skills to pull the entire project together. One of the main projects we completed during my second-year was the design for a cultural center in Huntington, Indiana. We were given a set of parameters and requirements, and it was up to us to come up with a concept to unify the design. For instance, my concept was centered on the energy found in the ripples and whirlpools in water. I used similar shapes and designs found in these two water features to define my spaces, walls, and activities. To convey these ideas, I applied a variety of my skills learned in the past two years.

Huntington Cultural Center – Museum Gallery

Huntington Cultural Center – Second-Year Final Project – Museum and Amphitheater

When students enter their third year of architecture school, they are exposed to a variety of ideas and ways of approaching a project. At this point, professors may take

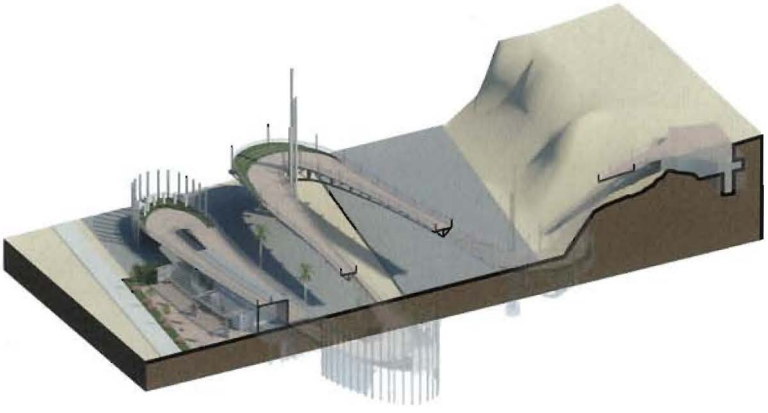
very different approaches to how they teach their studios, depending on their areas of expertise or interest and teaching style. For instance, one studio may be focused on designing sustainable architecture while another studio may be focused on new and advancing technologies. One of my studios during my third year focused on building small structures with found materials.



Bike and Kayak Locker – Created out of found materials, to be installed in a garage

Another professor focused on the beauty within architecture and would ask her students to reflect on what beauty meant to them.

While the students are being exposed to these different ideas, they also have opportunities to apply their skills to a wide variety of projects. By this point, students probably will have taken several courses outside of studio, such as structures, building technology, history of architecture, and environmental systems. The professors will challenge the students to integrate the knowledge they are learning into their studio projects. The students now have the ability to create more fully developed designs and more complete projects. For instance, another one of my third-year studios was focused on a steel bridge competition. My partner and I chose to design a bridge that was completely accessible to everyone. Besides designing the structural



Steel Bridge Competition Design

and material systems, we focused on creating an experience with the bridge for several types of activities, such as walking, running, skateboarding, biking, or some other kind of physical activity. This was the first time we had designed something that, if carried out in a real-life situation, had the potential of being built and being structurally stable.

Steel Bridge Competition Design

Once a student enters his or her fourth year of undergraduate architecture course work, the studio should hopefully be a culmination of many things the student has learned over the last four years. For instance, I am currently in a studio doing a design/build project. A design/build studio is one where the students design a small project, and then they build it. Our studio designed a small playscape that we are in the process of building for the children in the Historic Meridian Park Neighborhood in Indianapolis, Indiana. While this is a fairly simple design project, we had to research everything including the types of bolts we would need to connect the pieces of wood together. It has taught me a lot about how pieces fit together in order to become a finished product.

Construction of Playscape – Fourth-year studio design/build project

Completed Playscape – Fourth-year studio design/build project

Helpful Aspects of Studio

After experiencing four years of these different types of studios, I have personally found some things to be very helpful, while other things could be left out of the studio experience. First, having charettes in which professors ask the students to have an idea expressed in a certain amount of time pushes the students to work hard and produce design solutions in a short amount of time. This teaches students how to convey their ideas quickly and effectively. Having this skill would be incredibly helpful in describing an idea to a client. It is important to be able to visually express an idea to a client in a clear, concise manner.

Second, a good balance of reflections and discussion along with the studio projects gives students an opportunity to ponder on what they have been learning and to reflect on it. This helps to reinforce the lessons being taught and to help students understand how the lessons can be applied to their own lives. For instance, I have been in a couple of studios where the professor talked about several buildings in Muncie, Indiana that could be considered as both good design and bad design. This helps me visualize how design principles can be applied to buildings that I see every day. Third, to take this idea a step further, it is helpful when professors ask us to apply these skills to projects that we could potentially receive from a client when we are practicing architects. This is helpful to see how we would practically apply our skills in the field of architecture.

Finally, the willingness of a professor to assist students and be available makes a huge difference in a student's life in studio. While it seems like a simple thing, professors who make themselves available to students are able to help students more

and give helpful feedback on projects, which helps students to succeed. I believe that the best professors take the ideas that the students come up with and try to make those ideas the strongest they can be, as opposed to changing the design to something that the professor prefers instead.

In addition to these strengths that I have observed in the studios I have experienced, I have also noticed how studios can be weakened by a couple of aspects. For instance, I believe that it is possible for a professor's approach to architecture to be too abstract. While thinking about a design problem in a new way can help a student approach it from a different angle, some professors create project statements that would not be considered within the realm of architecture. Sometimes these small projects can be helpful in expanding our definition of architecture, but, in my opinion, some projects stretch the definition a little too far. For instance, a studio professor might have the class design a piece of equipment with an underlying design concept or theme. Then, as a practical exercise, the professor may ask the students to combine design ideas with a partner to create a whole new product. The resulting piece of equipment could turn into something completely fictional that would never be built or fully developed. More than likely, the students will not encounter a design problem like that while working in an office, so they have difficulty applying the implied lessons to an actual design problem.

It can be determental from the success of a studio class when professors are not transparent or do not make themselves available. If a professor leaves the building before studio is over, and a student has a question, that student does not have the opportunity to gain from the professor's advice or opinion. Advice and opinions from the

professor make such a huge impact on determining how much a student learns in a given studio, especially in an environment where most of the learning comes from one-on-one discussion between a professor and a student about the student's work.

What is Missing in our Architectural Education

During the second year of my architecture undergraduate studies, I became frustrated because I felt that there were a few aspects of architecture that students were not being exposed to. While I was learning a vast amount about how to convey my design ideas, to think outside of the box, and how to apply my ideas to a design problem, I was very interested in how the field of architecture could help those in need. There are people in the United States and all around the world living in poverty without adequate housing. In many developing countries, people live in homes made out of whatever materials they can pile together to make a shelter. When a disaster happens, such as a tsunami, a hurricane, or an earthquake, many buildings, homes, and shelters are immediately destroyed, and people are without the resources that they need to rebuild. I was very interested in learning more about how architecture can meet those needs, but I did not know where to look.

If I could change anything about my undergraduate experience, I wish there was a studio that was devoted to these topics. This type of architecture has not been as common or popular; therefore, it has rarely been taught or focused on in architecture schools, especially in a studio environment. However, I believe these topics are important to become aware of while studying architecture. These are ways in which architects can give back to the community and to the world with their unique set of skills,

and all architects should look for opportunities to be able to give back with their skills. In any career field, it is important to develop a sense of compassion for people, and this also applies to the field of architecture. Through my own research and internship experiences, I have learned a vast amount about specific ways that architects can give back to the world, what architects are currently doing to give back, and about new methods of design that will create sustainable, affordable architecture for those less fortunate around the world.

Internship Experience

During the summer after my third year of school, I interned with an organization called Engineering Ministries International (EMI) at their world headquarters in Colorado Springs. EMI is a non-profit organization made up of architects and engineers that provides free design services for those in need around the world. They partner with locals in developing nations and provide the design and construction documents needed for that building to be built. Most of the time, the construction work is then contracted to a local company within that country to help strengthen the local economy in construction work. To date, EMI has designed over 1000 projects in over 90 countries, including facilities such as schools, orphanages, churches, hospitals, and much more.

EMI Project in Manchay Peru
Community Life Resource Center

As an architectural intern with EMI, I was placed on a project team that traveled to

EMI Project in Manchay, Peru – Community Life Resource Center

Manchay, Peru in order to help design a community center in one of the poorest areas in the country. I traveled to Peru and visited the site and surrounding areas for about two weeks with a team of architects and engineers to conduct research on site, talk to the clients, and start the design process. Once on site, I helped take measurements of the existing building and input the information into the computer software to start designing. I then started creating the construction documents for the new design, which were completed by the end of the summer.

Amidst the vast amount of knowledge that I gained through this internship, I learned just how valuable the skills of an architect can be in impoverished communities. Without our team, or other architects like us, the community center would not have been built. The community center will be used for a variety of classes, such as sewing and gardening, that will enable the people in the community to learn a skill, start their own business, and earn money for their families. This community center has the potential to reach countless people in Manchay, Peru, and it was made possible by an organization made up of architects and engineers who wanted to use the skills that they have in order to give back to people in need.

Ways to Get Involved

EMI is not the only organization or group of individuals who are passionate about this type of architecture. Architecture for Humanity has also created a myriad of different projects that have helped countless individuals and families all over the world. Habitat for Humanity's mission is to eradicate sub-standard housing and provide safe, affordable housing to people in need. In the wake of a disaster, an architect's skills could be the missing piece of the puzzle to help a community rebuild safely and to re-establish homes and a sense of community in an area. There are countless opportunities for architects to get involved and give back with their skills.

In order for individuals to become aware of these opportunities, the exposure must start during the education of aspiring architects. Exposure to these topics needs to start early so that architecture students realize the potential that they have to make a difference in the world. If the only opportunities presented are those that come with prestige and glory for the architect, then the students are missing out on an entirely different definition of what architecture is.

Focus of the Thesis

In light of my experiences both in the architecture studio and in my internship, I have decided to research how the field of architecture is currently benefitting those in poverty, especially those in developing countries and victims of a disaster. This type of architecture requires a very different kind of approach and many different unique design solutions. This type of architecture revolves around the needs of a client and focuses on meeting those needs in the best possible way in order to benefit the client. It

requires compassion for those less fortunate and a drive to help those in need. No matter what kind of architecture students decide to focus on later in life, I believe that developing these skills and compassion can affect any design decisions that they make in the future. A studio focusing on these subjects can both help shape an individual ready to enter the field and help reshape the definition of architecture.

LITERATURE REVIEW

Introduction

In preparation for the design of a studio class, the following section is dedicated to exploring the vast amount of research and current projects on the topic of designing for people in need. Students currently completing their architectural education have the opportunity to be encouraged by the wide variety of research, thought, and actions that have been centered on these important topics. A vast majority of authors have commented at length on the state of the profession of architecture – what has defined the profession in the past, current turning points, and hopes for the profession in the future. This section will focus on architects and their unique role within humanity, the importance of collaboration, architecture as it applies to disaster relief, architecture in areas of poverty, the many sustainable technologies available, as well as a critique and evaluation of education as well as how to introduce these necessary topics into the lives of young architects early in their careers.

The Problem with the Profession

In order to determine how well architecture is meeting people's needs, one must first determine the definition of architecture and its purpose in the world. In the book *Design Like You Give a Damn*, Cameron Sinclair asks the question, "Should design be considered a luxury or a necessity? This issue would plague not just architects but also planners, policymakers, and aid organizations struggling to balance the logistics of providing shelter with the human longing for a place to call home" (Sinclair, 34). He brings up the controversy over whether or not architecture is merely a beautiful addition

to the world or it is a vital necessity in day-to-day human life. Should architecture's only focus be to create a building revolved around aesthetics? Or should the focus of the profession be to provide shelter and safety for those that need or request it?

Good design focuses on meeting people's needs in creative and sustainable ways. For the profession to take on the opportunities and responsibilities of changing the world, architects must begin with redefining what good design is. Bryan Bell speaks to the definition of design in *Expanding Architecture: Design as Activism*. Bell explains that in order for architects to evaluate how design relates to humankind, they need to "reconsider what 'design' issues are. Rejecting the limits we have defined for ourselves, we should instead assume that design can play a positive role in seeking answers to many different kinds of challenges. We have limited our potential by seeing most major human concerns as unrelated to our work" (15). Design has the power, when put to good use, to make a major difference in countless human lives. It helps provide security, hope, and shelter to its occupants in unique and creative ways. Bell also emphasizes that "design does not have to be compromised in the process of serving the needs of others" (19). The needs of a client or a group of people can be met by thoughtful design.

If the main purpose of architecture is to provide security, hope, and shelter by meeting client's needs in the way of thoughtful, creative designs, then many experts feel that architects have strayed away from their purpose. Thomas Fisher discusses this in his article, "Architects Behaving Badly." He worries that architects have ignored their main purpose, and says, "since architecture centrally involves constructing environments for people, why has the architectural community largely ignored

environmental psychology, the field that analyzes how well we do in meeting people's needs?" (1). If many architects have been ignoring the main purpose of architecture, it is concerning to consider what kind of architecture they have been creating in the meantime. Fisher also speaks to this as he expresses many desires, "to avoid facing up to what we, as architects, have done over the last fifty years...what this research really makes obvious is that we have been designing cities without green space, workplaces without windows, offices without adequate ventilation, and stairwells from hell" (1). Some examples of architecture can make one wonder if it has even been designed for a human at all.

While some architecture has failed to meet the needs of any human being, another type of architecture has been created to meet only the needs of the richest population in the world. Much of the high-profile and high-commission types of designs are the result of the requests of people who have the money to pay for their requests. This is not surprising. Since architects have families to feed as well, it is hard to blame them for taking on projects that provide a nice paycheck. However, problems arise when the majority of the population of the world is not considered from a design standpoint because they do not have the money to finance their requests for adequate shelter. In *Design for the Other 90%*, Cynthia Smith points out that, "ninety-five percent of the world's designers focus all of their efforts on developing products and services exclusively for the richest ten percent of the world's customers. Nothing less than a revolution in design is needed to reach the other ninety percent" (19). When the majority of architecture is focused on designing for the richest part of the world, is that truly meeting the needs of humanity?

Based on these findings, a revolution is needed to redefine how many architects characterize architecture. As Bryan Bell points out, "The gap continues to grow between what millions of people need and what the current system of housing and building provides" (9). Young architects' perspectives need to be reshaped in order to define how they approach architecture. All architects have the unique responsibility and opportunity to help those in need with their specific set of skills. If all architects were to give of part of their time and efforts in order to design for the "other 90%" of the world that needs it most, the profession would be drastically changed. As Bryan Bell points out, "What might a whole new profession of public-interest architecture look like?" (10). As one looks at the profession of architecture today, there is hope that architects are moving in this direction to serve humanity.

Turning Points

After looking at many of the designs of architects today, there is hope that the profession is moving toward a focus on humanitarian design. Many architects have realized their opportunities and responsibilities toward humanity and are using part or all of their time to design for those who are homeless, those affected by natural disasters, and more. Bell says that the "foundation of architectural thought is constantly shifting," and those thoughts are being focused more and more towards humanitarian architecture (25). Organizations such as Architecture for Humanity and Habitat for Humanity devote themselves to helping individuals and families in need, both in the United States and around the world.

In 2014, Shigeru Ban won the Pritzker Prize. The Pritzker Prize is awarded annually "to honor a living architect whose built work demonstrates a combination of those qualities of talent, vision, and commitment, which has produced consistent and significant contributions to humanity and the built environment through the art of architecture" (Pritzkerprize.com). Shigeru Ban is known as "an architect for the people" because of his work in disaster relief architecture. Tom Pritzker says that Ban's "commitment through humanitarian causes through his disaster relief work is an example for all that innovation is not limited by building type and compassion is not limited by budget. He has made our world a better place" (Metalocus). This is the first time the Pritzker Prize has been awarded to an architect who has focused his career on disaster relief and humanitarian architecture. This marks a turning point in how the world views architecture and what types of architecture are considered valuable. As Pritzker also stated, "What Shigeru can do is create hope. He not only can create a building that can cover your head and provide you with housing; but creating hope in that moment of despair – that to me is a great, great accomplishment and a great contribution" (Metalocus). Designing architecture has the ability to create a sense of hope, peace, and safety, and that can be a true gift to humanity.

Architects and their Unique Role and Responsibility

When one thinks of an architect, typically buildings come to mind. Architects are known as the people who design and create the buildings of the world. However, architects currently have a much smaller effect on the built environment than expected. Bryan Bell explains how "architects directly affect only about two to five percent of all that gets

built, which hardly makes a dent in the requirement that we, as licensed professionals, attend to the public's health, safety, and welfare" (9). For a profession that prides itself on designing for the public, this is a surprisingly low number. Marie Aquilino backs this up in her book *Beyond Shelter* when she says, "on average, architects contribute to only three percent of the world's built environment. Their indifference – or worse, irrelevance – to the world's most vulnerable communities made them seem hardly worth talking about. Three percent is a terrible number" (8).

These statistics are concerning. They beg the question, "If not architects and planners, who is in charge of rebuilding towns and villages leveled by earthquakes and cyclones?" The answer is even more concerning – "no one is in charge" (8). If architects are not trained to deal with architecture relating to areas of poverty or victims of a disaster relief, then who is qualified? What group of professionals has any more training outside the realm of architecture? If the supposed "experts" are not in charge of creating sustainable, safe structures in these types of situation, the structures that are built are prone to be inefficient, unstable, or ineffective, built by whatever means necessary in order to provide shelter. Even if architects are skilled in designing for the rich, they may not understand the unique approaches and techniques that are necessary to use outside of designing for the rich. As Bryan Bell points out, "...we may soon find that we have too many architects skilled at designing museums and mansions and too few able to work with indigent people and communities in need of basic housing, sanitation, and security" (10). In order to be skilled at this type of design, young architects need to be exposed to it early on in their education and their careers.

While some architects may consider this type of architecture to be unimportant, too simple, or useless, it can be argued that this type of design has the potential to become the focus of architecture in the future. Bryan Bell points out that while "some architects may consider these activities to be marginal within the field...this form of practice promises to open up whole new areas of service for design professionals" (9). Good design has the potential to "play a significant role in addressing the most critical issues we face in the world today" (14). It is also important for designers to enable their clients, especially in situations of poverty, to become independent. For instance, in her book *Design for the Other 90%*, Cynthia Smith states that designers should recognize that "by actively understanding the available resources, tools, desires, and immediate needs of their potential users – how they live and work – they can design simple, functional, and potentially open-source objects and systems that will enable the users to become empowered, self-supporting entrepreneurs in their own right" (6). It is important to strength the power of the locals – instead of handing them fish, designers can begin to teach them how to fish.

So how can the architects of today contribute to designing with people's needs first in their minds? Bryan Bell challenges the traditional architecture firm when he asks the question, "What strategies can the traditional architecture firm use to contribute to architecture as a public service?" (94). While involvement can happen in a variety of ways, producing good quality design is a tool that is often underutilized. High quality design is "one of the most promising – and one of the most underutilized – strategies available for both improving the asset value and facilitating community acceptance of

affordable housing" (150). Good design coincidences with sustainable, safe, affordable buildings that can transform the way a large majority of our world lives.

Architecture and Collaboration

This unique type of architecture requires the collaboration of the people involved in many ways. First of all, if there are multiple architects involved in a design, it is incredibly important that they cooperate with one another in order to keep the client's vision at the forefront of their minds and meet the client's needs in the best way possible. Second, it is equally important to be in constant communication and collaboration with the community or individuals for whom the architect is creating the design. This also helps to keep their needs and desires at the top of the priority list. Finally, it is important to collaborate with anyone else working on the project, including engineers, contractors, or construction workers, to ensure that the client's dreams become reality.

One main way to communicate and collaborate with the clients involved is through graphics. A client may not always be able to visualize what the project may look like, and images, drawings, and graphics provide a way to help them understand. Using these types of graphics with clients "bridges a gap between visual and tactile communication, allowing the low-vision community to use the sight they have" (Bell, 132).

It is important not to underestimate the value in ongoing collaboration with the community. When working with a community in a developing country or another poverty-stricken area, architects may be surprised at the innovative thought of the

individuals in that area. Those individuals do whatever they need to do to survive, and this may include very creative ways of obtaining water, heat, food, and other necessary things. In many situations, "the poor are the creators and implementers of the most comprehensive and far-reaching systems for solving problems of poverty, housing, and basic services" (Smith, 61). Architects can usually learn a vast amount from the innovation of their clients in these circumstances. They also have the ability to provide lasting connections to these communities that will keep helping their situations in the future. For instance, Bryan Bell points out that "a long-standing, successful community design center connects communities in need with experienced professional volunteers for win-win results" (104). There is power through connections that will help a community for years to come.

It is important to establish the importance of collaboration early in a young architect's career. Ideally, this value would be instilled during education, especially through the studio process. The studio environment provides many useful opportunities to encourage students to work together and learn how to work in teams. This helps students prepare for practicing architecture because "in the real world, little happens without collaboration. Design/build projects are a great vehicle to teach a team-based approach" (Bell, 248). There are also unique ways in which studio classes or students could serve the community around them while learning how architecture can make an impact on lives. This requires many universities to think outside of the box, because "in order for community-based education to serve communities effectively, universities must challenge many of their entrenched traditions and create a new collaborative

paradigm" (Bell, 264). Architectural education provides unique opportunities for students to develop compassion for the communities in need around them.

Architecture and Disaster Relief

When a natural disaster strikes, such as a flood, a hurricane, or an earthquake, many people are left without homes, jobs, and shelter. When Hurricane Katrina hit, many families in Louisiana, Mississippi, and other areas found themselves immediately homeless and reliant on volunteers and organizations to help them survive from day to day. When a major earthquake hit Haiti in 2010, buildings collapsed from poor construction, and to this day, people are still in need of homes. Areas affected by disasters are all different from one another and require very unique specific solutions to help the people in need. Architects have the ability to play several specific roles in these situations.

Because of architects' unique training and set of skills, they are able to create safety and hope with a wide variety of projects. In a situation like the earthquake in Haiti, creating new structures that are safe and long lasting becomes even more important than ever. Marie Aquilino states in her book *Beyond Shelter*, "While aid agencies are willing, they do not have an architect's knowledge or insights; consequently, the buildings that replace destroyed communities are frequently unsafe" (7). Good quality design can also come into play in order to bring hope to the clients and communities in unique ways. For instance, the use of light, especially natural light, can be an affective technique in bringing up moral in a disaster-stricken area. Bryan Bell says, "we desire lightness for ourselves as a kind of antidote to our consumption of

the heavy...in contrast, we propose lightness for others as an antidote to deprivation, in the form of disaster-relief housing for the refugee and the displaced" (51). High quality design can be an effective tool when designing for disaster relief.

When architects are involved in design for disaster relief victims, it is imperative that they follow through with their intended project. For instance, if a community is promised units for temporary housing, but those units are never designed or built, it creates more devastation in the community than there was in the beginning. As Cameron Sinclair points out, "Unless you build it, it doesn't matter. Sounds harsh, but it's true. In the eyes of a community, be it recovering from disaster, living in systemic poverty or ravaged by blight and neglect, visions and designs for a project are simply a dream" (12). Architects also need to be willing to invest in the community long-term. It takes time to make lasting changes in a community that has been devastated by a disaster. Architects need essentially be "the last responders...architects working in post-disaster reconstruction are not needed just in the first four weeks, but for the following three to five years" (33).

Architecture in Developing Countries and Other Areas of Poverty

In addition to the needs of communities affected by natural disasters, there is also a vast amount of people around the world who are in poverty because of their economic circumstances. Poverty affects more people than we typically realize. According to Cynthia Smith, "Nearly half of the world's population lives on less than $2 a day, and of these, almost 2.5 billion people use wood, charcoal, or dung for their cooking and heating needs" (Smith, 27). As far as housing is concerned, Smith states that "almost

one billion people already live in informal settlements around the world, and this population is expected to double in the next twenty years as people continue to move to the cities in search of work and opportunity" (Smith, 4).

The number of people in the world lacking housing is astounding. The housing crisis affects people around the world, both in the United States and in developing countries. According to Bell, "twenty-five percent of all American households face severe housing challenges, including insufficient funds for monthly rent or mortgage payments, maintenance, and repairs; overcrowding, both within individual dwellings and in high-density multifamily developments; and structural deficiencies. These 30 million households include not just the poorest and those without jobs, but also teachers, librarians, firefighters, healthcare workers, and many others who make significant contributions to our communities" (149). Even though these statistics are staggering, there are people around the world that are in even more extreme poverty than those trying to make a rent payment. Some of the instances of insufficient funds in the United States don't come close "to the extremes of wealth and impoverishment or the depths of desperation experienced by billions of people elsewhere in the world" (Bell, 10).

Knowing these statistics, it is important to develop a sense of compassion for these needs around the world, and to act on that compassion. The first step to action is becoming aware of the problem. "According to the World Bank, the richest 2% of the world's population accounts for 76.6% of all consumption; the bottom 40% accounts for only 1.5%," which could point to a lack of knowledge on the extreme state of poverty in the world today (Smith, 41). As architects place themselves in these areas of poverty, it is essential to understand the culture and the real problems in the area in order to begin

proposing a solution. Sometimes, the cause of poverty could lie with the government, the economy, lifestyles choices of individuals, and many other things. To begin to help people in these circumstances, architects must dig deeper than just the built environment. As we begin to try to change people's lives, "we tend to forget that changes in lifestyle and expectations happen at very different rates than changes to the built environment" (Aquilino, 128). It is a long, on-going process that involves more than a building. However, a well-designed facility or building for a community in poverty could help turn a corner into possible solutions.

Architecture and Contemporary, Sustainable Technologies

On the practical side of using architecture to help communities in need, many professionals are coming up with new technological products and ideas to integrate with architecture in order to provide more sustainable, affordable designs. Cynthia Smith says, "as an engineer, I am convinced that technology has a critical role to play in ending the scourge of global poverty" (33). There are many examples of innovations that help filter water, create shelter, and more. For instance Cynthia Smith writes about "the international designers who are working to design of the ninety percent of the world who traditionally cannot afford 'designed' work…I found them at universities and in small nonprofits, teaching people how to make inexpensive filter for clean water; designing bamboo treadle pumps for farmers to irrigate their crops in India; creating temporary shelters for earthquake victims in Pakistan; restoring the culture of a city like New Orleans; and creating ingenious ways to transport goods to market in Kenya" (16).

These are just a few of the countless examples of innovative solutions being created by architects and engineers along with the locals in order to improve the quality of lives.

According to several authors, technology could play a key role in helping the housing crisis through prefabricated and affordable housing. In his book *Expanding Architecture: Design as Activism*, Bryan Bell describes the housing crisis and the potential of technology to help in this category. He explains, "Prefabrication can be a cost-effective method of construction, and highly energy-efficient homes have lower utility costs, making sustainable prefabrication an ideal formula for affordable housing. Currently, however, prefabricated homes are seldom designed for energy efficiency, and most environmentally sustainable homes are expensive to build" (201). If this is true, then current designs for prefabricated homes defeat the purpose of their design. The ability to mass-produce houses through the means of technology for more affordable options to low-income communities could transform the industry of affordable housing.

In addition to utilizing technologies that architects and engineers have created, there is a tremendous opportunity to learn from individuals in these areas of poverty. Cynthia Smith points out that "the poor are the creators and implementers of the most comprehensive and far-reaching systems for solving problems of poverty, housing, and basic services" (61). People who live in these types of situations have to take whatever means necessary in order to survive. In doing this, they often come up with extremely creative ways to live day-to-day using their very limited resources. Design professionals could take lessons from these individuals in order to better understand how to design for areas of extreme poverty.

Education

In order for these ideas, knowledge, considerations, and innovations to take root in architects' minds and hearts early in their careers, they need to be exposed to this type of architecture while completing their education. Too often, even studio projects focus on designing for the imaginary wealthy clients in the world, while not enough projects and classes focus on the potential impacts of humanitarian architecture. The current architecture educational system at most universities "mostly prepares students to meet the building needs of relatively wealthy individuals and organizations, even though most of the growth in population and most of the need for architectural services exists among billions of impoverished people across the planet" (Bell, 10). As the need for architecture is moving to the part of population that is in desperate need of design services, architectural education may follow suit. The consensus of many design professionals is that "a movement is growing both within the professional design community and the design, engineering, and architecture schools to direct our practices toward socially responsible, sustainable, humanitarian design" (Smith, 11).

As architectural education makes a shift to introducing the different aspects of humanitarian architecture in the classroom, professors will have to think of new, creative ways to instill compassion within their students and inform them about the need for humanitarian architecture in society. Studios that blend community work and studio projects together for students tend to give students a taste of designing in the "real world." In writing about architectural education, Bryan Bell mentions, "Student action with communities can have transformative power – for both the students and the

citizens they reach" (274). This allows students to be placed in a situation where they have a real client, and their designs affect real people. Community-based design studios require a lot of experiments for both the professors and the students, which "have the potential to expand the field of engagement and to initiate students and faculty into the political aspects of architecture" (Bell, 23).

Overall, the main purpose of architectural education focusing on humanitarian architecture is to create young architects that have compassion towards humanity and their clients, and to create architects who will also be responsible citizens both within their own communities and around the world. Professors within architectural education have a unique role in cultivating these values in future architecture. Throughout the vast amount of resources on this topic, Bryan Bell says it best as he talks about his approach to education: "What I am really cultivating in the classroom is the sense of shared citizenship. As Plato would have said, you don't become a citizen unless you act. So I am creating the possibility within the university for students to take all the learning they do in school, and make it real through actions that tell them why that knowledge has any relevance in the first place. The architecture is just a by-product. The main result is the impact it has on the minds of the students and the communities" (278).

As a testing ground for these theories I have created a studio class focused on topics of humanitarian design. Through my experiences as an undergraduate student, I believe these topics need to be integrated into the curriculum. I have created this class as a way to experiment with how to encourage compassion in future architects and

make students aware of the unique opportunities architects have to use their skills in order to help others, both in their own communities and around the world.

STUDIO PHILOSOPHIES AND COMPONENTS

Studio Class

In light of all of my experiences as an undergraduate architecture student and the knowledge I have gained through a literature review on humanitarian design, I have created a studio class focused on architecture in areas of poverty and architecture in disaster relief. I believe that it is imperative for young architecture students to be exposed to humanitarian design during their years in school. By learning about this, they will become more well-rounded individuals and architects out in the profession. If students were exposed to the unique opportunities that architects have with their skill sets, perhaps they would be more willing and excited to use at least part of their time as professionals helping those less fortunate. My hope is that students will come out of this studio with a broader perspective on architecture and a compassionate heart for those in need.

Personal Philosophy

Through my internship experience, I saw the direct impact architects can have on people's lives when they give of their time and skills in order to help others. Because of this, I want to dedicate my career to helping improve people's lives, especially those in need. If I were to become a professor, the studio that is described and laid out in this section is the type of studio class that I would want to teach. I believe that it is important for architecture students to be exposed to humanitarian design and the difference that it can make in people's lives early on in their architecture career. This gives students a chance to form their own opinions, beliefs, and values concerning architecture before

they enter the profession. Learning about humanitarian design, and experiencing it firsthand while on my trip to Peru, my passion for architecture comes from the desire to help others and improve their lives.

Learning Experience

There are several things I have learned while writing this thesis and creating the studio class. I have been challenged to figure out how to "ignite" compassion within students. One of my goals with assignments and projects is that they do not feel like busy-work and would instead challenge students to think about architecture in different ways. I want to push students to put their clients before themselves and think about clients' needs over their own desires. It is hard to change students' definitions of architecture, so I am attempting to create a class that would help broaden their perspectives.

In addition, through my research on these topics, I learned that there is a vast number of architects in the world currently devoting their time to helping those less fortunate. From Architecture for Humanity to Shigeru Ban (the 2014 Pritzker Prize winner), architects are stepping forward and beginning to change the profession. They are using new technologies combined with sustainable materials in order to create affordable, sustainable structures for those in need and in poverty around the world, and they are encouraging other architects to give of their time and do the same. When I failed to hear about these architects through the first half of my architectural education, I assumed they did not exist. Now, after having sought out people with similar philosophies as my own, I see that the profession is changing. The architects of today are focusing more and more on the other 90% of the population in need of their skills,

and I am hoping the focus of architectural education will follow this progressive movement in the profession.

Teaching Philosophy

"Take it upon yourself to identify a problem in the public realm and pursue a solution." ~ Bryan Bell, Expanding Architecture: Design as Activism

While experiencing my architectural education as a student, I have gained valuable experiences and perspectives on the profession of architecture. My experiences and research have fueled my passion for educating the next generation of architecture students. Specifically, I strive to inform students about their unique role and opportunity as future architects to serve those in poverty with our unique set of skills. I design my design studio classes to focus on these values.

Learning is a process. In studio, this can mean that the process to get to a final design involves many renditions, drawings, and failed ideas. The process is typically more important than the finished product. It is important to establish different methods of learning. There are an infinite number of different ways to arrive at the same solution, so students should explore many different paths. Learning is a life-long process, and hopefully the skills students learn in the studio will carry over into their professional lives or careers and into other areas of their lives.

Studio classes should consist of a wide variety of activities, such as hands-on projects, discussions, reflections, presentations, group critiques, desk critiques, and more. Studio is an excellent opportunity for students to try new ideas, to fail, and to try again. They should learn to ask lots of questions of themselves and others in order to be inquisitive about the world. This is a place where students have the opportunity to combine all of their skills taught in other classes to create a comprehensive project.

As a professor, I want to create an open environment where students feel free to ask me any questions. I strive to make myself available to my students both during and outside of class. I truly care about my students, and I want them to feel valued and respected as individuals. I want to challenge my students and push them to the limits of what they think they are capable of doing. I want to push students to do their best work.

One of the hardest tasks that I must tackle in a studio class is how to invoke compassion within students for those less fortunate. It is not an easy task, and each approach may be received differently by each student. While some may choose not to respond, I strive to move my students to compassion by telling stories, showing videos, and providing examples of people whose lives have been changed by humanitarian design. A project is not personal when seen on paper; but when the project has the faces of people attached to it, suddenly it becomes personal. It is essential to give students the opportunity to work with communities in order to see the direct impact their work can make on people's lives.

Overall, I hope the students leave with a broadened perspective of architecture. I hope that, if they were not already, the students are compassionate towards others in need. Students should develop their passion for architecture and determine why they are interested in this career field. Those reasons will help to drive their work for years to come.

ARCHITECTURE in NEED

Course Syllabus

DESIGN is the ultimate renewable resource. Together, we can continue to build a BETTER FUTURE. ~ Cameron Sinclair

Ball State University | Department of Architecture | Fall 2030 | ARCH 301 Martin
ARCH 301 – Advanced Architectural Design Studio
Credits: 5 credit hours
Class Meets: MWF 1:00-4:50
Professor: Rebecca Martin
Prerequisites: ARCH 201, ARCH 202

Course Description

Our focus in this studio will be on exploring architectural design solutions in developing countries in areas of poverty and disaster-relief responses. We will be redefining what architecture means and architects' role in the world. We will be writing and reflecting on the architect's responsibility to the world. Together with class discussions, we will be putting those thoughts to use in charettes with a variety of design situations. After several weeks of research, reflections, and charettes, we will culminate the semester with the completion of a design project based on the knowledge and practice gained from the exercises and research that we have been doing throughout the semester.

Studio Format

First Third of the Semester (Week 1 – Week 5)
Group discussions, readings, charettes, reflections
Gaining ideas and insights from classmates and from research

Remaining of Semester (Week 6 – Week 16 including Field Trip Week)
Design project combining knowledge from discussions, readings, charettes

Course Objectives

To expand the definition of architecture
To redefine our roles and responsibilities as architects
To become informed about poverty, developing countries, and disaster relief
To learn from past & current architects on how to approach these design challenges
To learn how to apply these skills, reflections, and practices into design solutions

Studio Culture

Promote and sustain a studio environment that encourages questions, discoveries, investigations, collaboration, experimentations
Do not treat these exercises and projects like competitions – learn from each other and work with one another (collaboration)
Desk critiques, pin-ups, and discussions all involve and require your participation
Ask questions – LOTS of them
You are encouraged to move back and forth between the computer and sketching – both computer generated images and hand drawings are valuable tools to be utilized
Be in studio – take advantage of the given time
Respect each other, encourage each other, and support one another

Course Requirements

Mandatory attendance
Participate
Have new work to show at every critique
Meet project deadlines
Enjoy learning
Set high, realistic goals for yourself
Push yourself to reach your highest potential

Attendance Policy

Attendance is mandatory in all studio sessions for the entire duration of the class unless you have received permission to be absent by the professor. Absences will be considered excused at the professor's discretion, such as in cases of illness, a death in the family, or emergencies that require you to be absent from studio. Email or talk to the professor as soon as possible. The professor will work with students as much as possible as long as students communicate with the professor. Absence during a pin-up, mid-review, and final review is not permitted and could result in receiving an incomplete grade on an assignment or a drop in a letter grade if the student has not prearranged the absence with the professor ahead of time.

Grading

Grades will be based on three categories, with each assignment having specific requirements:
Attendance and participation
Process and intensity of work and effort
Quality of final products
Consult the grading sheets on individual assignments for a more detailed breakdown on how you will be evaluated. Should you have any questions about your grade or progress in the course, do not hesitate to ask for a meeting with the professor.

Communication

All class assignments will be given to you as handouts, sent to you electronically by email, and/or they will be placed on the course blackboard site. You are responsible for keeping up with these documents. If for some reason you are not receiving the emails from the professor, let the professor know immediately so that the situation can be rectified. Please feel free to contact the professor by email, by appointment, or by phone at any time regarding this course, the university, architecture in general, the profession, or any other topics.

Recommended Readings

Some readings in the class will be required, while others are recommended in order to provide a more thorough coverage of the topics that we explore throughout the semester. Required readings will be scanned and made available for you electronically. Most required readings will come out of the recommended readings list as follows:

Expanding Architecture: Design as Activism
Bell, Bryan
NA2573.S6 E96 2008

Beyond Shelter: Architecture and Human Dignity
Aquilino, Marie Jeannine
NA2543.S6 B49 2010

Design for the Other 90% - 1st Edition
Smith, Cynthia E.
TS171.4 D47 2007

Design with the Other 90%: Cities
Smith, Cynthia E.
TS171.4 D488 2011

Design Like You Give a Damn: Architectural Responses to Humanitarian Crises
Architecture for Humanity
NA2543.S6 D397 2006

Design Life You Give a Damn 2: Building Change from the Ground Up
Architecture for Humanity
NA2543.S6 D3972 2012

The Inclusive City: Design Solutions for Buildings, Neighborhoods, and Urban Space
Goltsman, Susan M.
NA9031 I52 2007

Accommodations:

If you need course adaptations or accommodations because of a disability, please contact Larry Markle as soon as possible. Ball State's Disability Services office coordinates services for students with disabilities; documentation of a disability needs to be on file in that office before any accommodations can be provided. Disability Services can be contacted at 765-285-5293 or dsd@bsu.edu.

WEEKLY SCHEDULE

Week 1: August 19-23, 2030 – *Architects and their Unique Role and Responsibility*

Monday, August 19

1. Course overview/introduction
2. Review the syllabus
3. Learn about students' background and exposure to studio themes
4. Reading assignment: *Expanding Architecture: Design as Activism* – Foreword, Preface, and Introduction (9-25)
    a. Come with thoughts ready to discuss next class

Wednesday, August 21

1. Documentary – 2014 Pritzker Prize winner Shigeru Ban
    a. http://www.metalocus.es/content/en/blog/charlie-rose-tom-pritzker-and-shigeru-ban
2. Discussion of readings and documentary
3. Assignment: Search for precedents
    a. Find at least 3 projects done in low-income communities (either in the United States or out of the country)
    b. Make a list of positive and negative aspects of each project
    c. Print out a picture of each project on 8.5x11 paper to pin up on Friday, and bring your list of positive and negative aspects to pin up

Friday, August 23

1. Pin-up pictures of projects
2. Short presentations of projects
3. Assignment: Reflection #1 due Monday, 8/26

Week 2: August 26-30, 2030 – *Architecture and Collaboration*

Monday, August 26

1. Reflection #1 DUE: Reflection on class discussions, films, readings, charettes, etc.
   500 words minimum (Three citations minimum)
2. Brief discussion on Reflections
3. Learn about students' background with collaborative projects/internships
4. Reading assignment: *Expanding Architecture: Design as Activism* – XI: The Transformative Power of Architectural Education (248-278)
    a. *"In the real world, little happens without collaboration. Design/build projects are a great vehicle to teach a team-based approach."*
       – Bryan Bell, 2008

Wednesday, August 28

1. Discussion over readings
2. Charette #1

Friday, August 30

1. Pin-up charettes
2. Charette mix-up
3. Assignment: Reflection #2 Due Monday 9/2

Week 3: September 2-6, 2030 – *Architecture and Disaster Relief*

Monday, September 2

1. Reflection #2 DUE: Reflection on class discussions, films, readings, charettes, etc.
   500 words minimum (Three citations minimum)
2. Discussion on reflections and collaboration
3. TED Talk – Shigeru Ban: Emergency shelters made from paper
   a. http://www.ted.com/talks/shigeru_ban_emergency_shelters_made_from_paper#t-22107
4. Briefly discuss documentary
5. Reading assignment: *Beyond Shelter* – Preface (pages 7-10)

Wednesday, September 4

1. First half of class – partner research
   a. Find one architectural solution to a disaster relief situation that worked well
      i. Why did it work well? Who designed it? Was it by an architect or a different organization? Did that help/hurt the design? How does it meet the client's needs? Overall pros and cons? Etc.
   b. Find one architectural solution to a disaster relief situation that didn't work well
      i. Why didn't it work well? Who designed it? Was it by an architect or a different organization? Did that help/hurt the design? How does it disregard the client's needs? Overall pros and cons? Etc.
2. Second half of class – discussion
   a. Why do some solutions work while others do not?

Friday, September 6

1. Charette #2
2. Assignment: Reflection #3 Due Monday 9/9

Week 4: September 9-13, 2030 – *Architecture in Developing Countries and Other Areas of Poverty*

Monday, September 9

1. Reflection #3 DUE: Reflection on class discussions, films, readings, charettes, etc.
   500 words minimum (Three citations minimum)
2. Discussion on reflections

3. TED Talk – Iwan Baan: Ingenious Homes in Unexpected Places
   a. http://www.youtube.com/watch?v=SxwLfSIkJDI
4. Briefly discuss video
5. Reading assignment: *Design for the other 90% - 1st Ed.* – pg. 5-27

Wednesday, September 11

1. Partner research
   a. Find an example of an architectural design solution that works well in a developing country
   b. Find an area in a developing country where there is still a need for some kind of architectural solution
2. Discuss findings
3. Start assignment/charette #3 – pick an area that you or a classmate has found that still has a need, and sketch/draw how to meet that need through architecture

Friday, September 13

1. Work on Charette #3
2. Second half of class – pin-up and discuss charettes
3. Assignment: Reflection #4 due Monday, 9/16

Week 5: September 16-20, 2030 – *Architecture and Contemporary, Sustainable Technologies*

Monday, September 16

1. Reflection #4 DUE: Reflection on class discussions, films, readings, charettes, etc.
   500 words minimum (Three citations minimum)
2. Discuss reflections
3. TED Talk – Paul Pholeros: How to Reduce Poverty? Fix Homes
   a. http://www.ted.com/talks/paul_pholeros_how_to_reduce_poverty_fix_homes
4. Briefly discuss TED Talk
5. Assignment: Research up-and-coming affordable technologies/designs that could help in the types of situations we have been researching
   a. Why does it work well? How does it meet the client's needs?
   b. Come to class with at least 3 examples, with at least one picture per example to pin-up

Wednesday, September 18

1. Discuss examples of technologies
2. Charette #4 – apply new research to an existing charette (either the disaster relief or third-world country charette)
    a. Draw from examples talked about in class
    b. Apply new knowledge in different ways to your design

Friday, September 20

1. Presentations/Pin-ups
2. Discussion
3. Assignment: Reflection #5 Due Monday 9/23

Week 6: September 23-27, 2030

Monday, September 23

1. Reflection #5 DUE: Reflection on class discussions, films, readings, charettes, etc.
   500 words minimum (Three citations minimum)
2. Discuss importance of charette work
    a. Learning how to think quickly and express your design ideas clearly
    b. How to use that on a full design project
3. Introduction to final project

Wednesday, September 25

Research day
Desk critiques

Friday, September 27

PRESENT research

Week 7: September 30 – October 4, 2030

FIELD TRIP WEEK

We will be visiting Auburn University to observe the rural studio. This studio aims to teach students about the social responsibilities of the profession by providing unique design/build opportunities. Students are active participants in building homes and buildings in low-income communities in western Alabama. While we are there, we will spend a couple of days with the current students of Auburn University to see how they work in studio, how they work together, and how they go about designing and building their studio projects. Hopefully we will also be able to join them on the design/build site for a day. We will also be exploring the communities that Auburn University has impacted with their projects.

Week 8: October 7-11, 2030

Monday, October 7

Discussion about field trip
How can we apply what we've learned to our design project?

Wednesday, October 9

Desk critiques

Friday, October 11

Desk critiques

Week 9: October 14-18, 2030

Monday, October 14

Desk critiques

Wednesday, October 16

Desk critiques

Friday, October 18

GROUP CRITIQUES
Groups of 2-3

Week 10: October 21-25, 2030

Monday, October 21

Desk critiques

Wednesday, October 23

Desk critiques

Friday, October 25

Desk critiques

Week 11: October 28 – November 1, 2030

Monday, October 28

Prepare mid-review boards

Wednesday, October 30

Prepare Mid-Review Boards

Friday, November 1

MID-REVIEW PIN-UP
Design must be at least 50% completed

Week 12: November 4-8, 2030

Monday, November 4

Desk critiques

Wednesday, November 6

Desk critiques

Friday, November 8

Desk critiques

Week 13: November 11-15, 2030

Monday, November 11

Desk critiques

Wednesday, November 13

Desk critiques

Friday, November 15

Desk critiques

Week 14: November 18-22, 2030

Monday, November 18

Prepare pin-up

Wednesday, November 20

Prepare pin-up

Friday, November 22

ALMOST FINAL PIN-UP
Design 90% complete
Complete board drafts for review
Round Robin Jury Review

Week 15: November 25-29, 2030

Monday, November 25

Design adjustments from review

Wednesday, November 27

THANKSGIVING BREAK

Friday, November 29

THANKSGIVING BREAK

Week 16: December 2-6, 2030

Monday, December 2

Work on presentation

Wednesday, December 4

Work on presentation

Friday, December 6

PROJECT DUE by 1 P.M., reviews begin promptly at 1

FINALS Week: December 9-13, 2030

Charette Assignments

Ball State University | Department of Architecture | Fall 2030 | ARCH 301 Martin

Charette #1: **Architecture and Collaboration**
Week 2 – Wednesday, August 28 – Friday, August 30
For this charette, you will be designing a water purification system for a community in Haiti. Your task is to create a system that can be utilized in individual households in order to collect rainwater, purify it, and reuse it. Visit http://www.slideshare.net/D4Z/j3s259 for some information to get you started. You will team up with a partner for this design to emphasize how important collaboration is in the workplace. Pass the design back and forth between the two of you three times, and have images to show each stage in order to present your process to the class. On Friday, after the partners present to the class, each team of two will pair up with another team in order to create one cohesive design. Ideally, each design pass through with the partners should be stronger than the one before, and the final collaboration with the teams should produce the strongest design of all.

Charette #2: **Architecture and Disaster Relief**
Week 3 – Friday, September 6
A tsunami has hit part of Los Angeles, devastating the community. You are part of a team of architects responding to the disaster about two weeks after it happens. There are still countless people who have lost their homes in the wreckage, and they currently cannot afford to rebuild the home they had. Your task is to design temporary housing for a family of five. Keep in mind, temporary housing can sometimes tum into permanent housing for some families who are economically disadvantaged. Thus, these structures must be wind-resistant, earthquake-resistant, and free from any water leaks. You must think of sustainable ways that these families can receive electricity and water. While space will be tight for temporary housing, use creative ways of making the most out of the home that you design for them.

Charette #3: **Architecture in Developing Countries and Other Areas of Poverty**
Week 4 – Wednesday, September 11 – Friday, September 13
You may choose from one of the following scenarios:
- a community in Ethiopia needs an electricity system to be implemented
- a community in Ghana needs a master plan for a medical campus
- a community in Gressier, Haiti needs a design for a church and community center
- a community that came up in our class discussions

Break up into groups of two and come up with two different designs per team of how to respond to these needs. For inspiration, look at examples of projects that have been done in the past that are similar to your chosen situation.

Charette #4: **Architecture and Contemporary, Sustainable Technologies**
Week 5 – Wednesday, September 18 – Friday, September 20
For this charette, take all of the research that you have done on new, sustainable technologies this week and apply it to one of your previous designs for Charette #2 or Charette #3. The objective for this charette is that you can apply your new knowledge to make your previous design even stronger.

Finding a Need – ARCH 301 Final Project

"Take it upon yourself to identify a problem in the public realm and pursue a solution." ~ Bryan Bell, Expanding Architecture: Design as Activism

Ball State University | Department of Architecture | Fall 2030 | ARCH 301 Martin

Background

As many of our sources have informed us, **the vast majority of architects focus all of their energy and efforts designing for the richest 2-10% of people in the world**. These high-paying clients draw the most work. However, in the past decade, a minority of architects have acknowledged **the remaining 90-98%** of the world's population. Around half of the world's population lives on less than $2 a day. Architecture desperately needs to be redirected so that more practicing architects are giving at least part of their time to designs that will benefit the lives of these people. Architects have a very unique opportunity. An architect's skill sets and training gives them the knowledge to provide **sustainable, affordable, safe design that can provide hope and life for a community of people**.

Project Description

Your challenge is to **design a community center** for a community of your choice. This community can be a low-income community, an area affected by a disaster, an area in a developing country, etc. Review websites such as Architecture for Humanity, the American Red Cross, Engineering Ministries International, and other such organizations to see what needs they are looking to meet. That will start to give you an idea of some communities that you could focus on for your project.

Once you have an idea of a community to focus on, **dive in**. Research their community, their demographics, and find out what their specific needs are. Conduct a socio-spatial analysis on the area in order to form a basis for your research. Find stories and histories on the locals in order to **connect faces and peoples' lives to this project**. Look for the culture, history, and heritage of the community, and see how this has affected the community today. There is **nothing more important than considering the client's needs** when designing a project. This is an important step.

When you begin designing, remember to **consider and incorporate the sustainable elements and technologies** that we have been exploring for the first part of the semester (i.e. water purification, ways of producing electricity, passive heating and cooling, ventilation for cooking, utilization of natural light, ways of disposing waste, sources of water, etc.). Determine what is absolutely necessary to incorporate into the design based on the needs of the people and identify what techniques would be helpful to them.

At the conclusion of your project, you should have a developed community center that has been designed around peoples' needs and with the **intent of improving the lives of the people in the surrounding community**.

Food for Thought

Questions to consider as part of the design process:

What classes could be held at the community center (sewing, gardening, first-aid, etc.)?
Would there need to be a place for children, such as a daycare, play area, or classes?
Would a health center be beneficial?
Would the community center have a specific focus, or would it serve a variety of functions?
How can the project appeal to the widest variety of people?
Who will spend the most time there?
Is it possible to use local salvaged materials on any part of the project?
How can you utilize passive heating/passive cooling/natural light?
Is there a way to purify rainwater to create potable water for the community center?
What is the climate of your designated site, and how can that be addressed/utilized in your building?
How can this project be universally designed for all types of people?
Can you find stories on the locals in the area? How can their stories affect your decisions?
Was the community ever thriving? If so, why, and why did it decline?
Should your design attempt to attract tourists to boost the economy?
Is your design primarily for the locals in the community?

Finding a Need

"Take it upon yourself to identify a problem in the public realm and pursue a solution." ~ Bryan Bell, Expanding Architecture: Design as Activism

Schedule

Week 6: Mon, Sept 23 – Intro to Project
Wed, Sept 25 – Research
Fri, Sept 27 – Present Research, Prep for Field Trip

Week 7: Mon, Sept 30 – Fri, Oct 4 – Field Trip to Auburn University

Week 8: Mon, Oct 7 – Application of field trip to project
Wed, Oct 9 – Desk Critiques
Fri, Oct 11 – Desk Critiques

Week 9: Mon, Oct 14 – Desk Critiques
Wed, Oct 16 – Desk Critiques
Fri, Oct 18 – Desk Critiques

Week 10: Mon, Oct 21 – Desk Critiques
Wed, Oct 23 – Desk Critiques
Fri, Oct 25 – Desk Critiques

Week 11: Mon, Oct 28 – Prepare Mid-Review Boards
Wed, Oct 30 – Prepare Mid-Review Boards
Fri, Nov 1 – MID-REVIEW Pin-up

Week 12: Mon, Nov 4 – Desk Critiques
Wed, Nov 6 – Desk Critiques
Fri, Nov 8 – Desk Critiques

Week 13: Mon, Nov 11 – Desk Critiques
Wed, Nov 13 – Desk Critiques
Fri, Nov 15 – Desk Critiques

Week 14: Mon, Nov 18 – Prepare Pin-up boards
Wed, Nov 20 – Prepare Pin-up boards
Fri, Nov 22 – ALMOST FINAL Pin-up – Rotating Jury

Week 15: Mon, Nov 25 – Design Adjustments from Review
Wed, Nov 27 – THANKSGIVING BREAK
Fri, Nov 29 – THANKSGIVING BREAK

Week 16: Mon, Dec 2 – Work on final presentation
Wed, Dec 4 – Work on final presentation
Fri, Dec 6 – PROJECT DUE by 1 p.m.

Submission Requirements

You are required to submit one 24"x36" presentation board and one physical model with dimensions not exceeding 36"x36". There are no specific requirements for drawings because you are required to show the appropriate drawings and text in order to best convey your idea. Review the skills you learned doing the charette exercises – how can you convey your ideas now that you have had a lot more time to research and explore this project? Remember – if an idea does not make it onto the presentation board or the model, it will not be seen. Make sure you are able to convey every part of your design through your presentation boards and model.

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